

# **EXHIBIT 31**



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throughout the research that it had been sent over by Augustine, or Augustine's company, because of the discussion we've already mentioned about it getting back through Customs and such. But I don't remember who suggested helium bubbles. I don't remember if Mike Reed suggested it, and the machine was available, or if it was suggested by Augustine or by Mark Albrecht. I don't know who suggested it.

Q. The first time you were involved in it being used, did you do something similar to what you did with the smoke machine? In other words just go into an OR and see what the laminar flow did with it?

A. Absolutely. So the first -- with any of this equipment, with the particle counter, with the bubble generator, it's quite a temperamental piece of equipment. They're all temperamental pieces of equipment, and you spend a while getting the thing to work, and then understanding how it works, and then understanding how it -- how air flows around the room. And so, actually, some of the first videos on my blog were not of experiments, as such; they were of those scoping exercises where we would put the bubble outlet underneath a light, say, under the laminar flow and then move the light away and show the disruption that the light was having on laminar flow.

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So there was quite a lot of experimenting with -- to better understand how air was flowing in the room, because it's -- well, it's interesting. It was something which people who were in the hospital at the time would come in and look at, and find very -- well, find fascinating, because airflow isn't something that most people think about. Surgeons think about it quite a lot, and to be able to see it is very interesting. So we spent quite a lot of time experimenting.

Q. Was the laminar flow clearing the bubbles similarly to the way it cleared the smoke?

A. I don't remember how the laminar flow cleared the smoke. I can't -- my memory of the smoke is really restricted to the thing turning on, and us being pretty concerned that the smoke detectors were going to go off. So I don't really remember how the smoke was dealt with by laminar flow. In terms of the bubbles, when laminar flow is unobstructed, it was extremely effective at clearing bubbles. And some of our videos demonstrate that. You can see a column of air, of clean air, clearing bubbles away very quickly, within seconds. And you can see the significant disruption that operating lights have on laminar flow very clearly with the bubble generate generator.

Q. Did you do any bubble studies with any other pieces

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of OR equipment, anesthesia machine?

A. Not with an anesthesia machine. We would put the outlet near to machines to see if they were warm, or if they created turbulence. Anything -- you get a flow boundary near any piece of equipment in the way of the laminar flow; so you'll get deflection of air off it, depending on where it is in the laminar flow zone, and how fast the air is moving, and the temperature. But we have since done experiments looking specifically, as I've mentioned previously, at the influence that the overhead operating lights have on laminar flow, and how the position of those lights affects clearance of bubbles, and therefore clearance of air from the region of the operative field. But that was subsequent to this.

Q. At some point, did you also -- would I understand that you were using the bubble machine to see if there were heat-generated convection currents emanating from other pieces of equipment?

A. To -- only sort of informally, where you've got this wand but it is picking bubbles out, and you sort of put it against people's faces and near their -- over the top of their heads and see how air flows over surgeons. It is quite interesting to see what airflow -- how airflow changes when you move your hand through an area. We didn't really

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focus specifically on other machines, apart from operating lights, as far as I remember.

Q. So, what do you call the electrocautery device?

A. A diathermy.

Q. Diathermy. Have you ever heard it referred as to a Bovie?

A. No.

Q. I think that's a brand in the U.S.

A. No, we don't tend to do brands in the U.K. We're pretty resistant to it.

Q. You didn't try to see how turning on a diathermy machine would affect the bubbles?

A. The machine? No, because -- well, no, we didn't. Because to actually use the machine, you'd need some meat, and we didn't have any meat.

Q. Any saws or drills?

A. Not to my recollection.

Q. But you did say you ran it over by the anesthesia machine?

A. Yeah. I mean, anything that was there in the room, we would have put the thing near. Because you're wandering around with this hose, basically playing and seeing what's happening. So anything which was anywhere near -- because the anesthesia machine sits -- tends to sit and straddle the

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boundary between the laminar flow zone and not, we were interested in how -- in the drop-off, because you would expect that, outside the laminar flow boundary, bubbles would circulate and collect, but they don't. It's a rather smoother area of clearance. The laminar flow zone has an area of influence just outside the boundary, so we would have looked informally at what the anesthesia machine does, but the anesthesia machine wouldn't have been on. It wouldn't have been active. It was just sitting there.

Q. It is just the mass --

A. Yeah, it is just the mass. You know, when the operating table was there, we would move that out of position, move it into position to see what -- how air flows around it. The specifics of exactly what we saw, I don't remember.

Q. I take it you never tried to do an airflow visualization in a simulated OR where basically everything was happening: the circulating nurse was moving, all the equipment was on?

A. Not to that extent. When we were actually doing experimental runs, everything was pretty controlled. So there weren't lots of people moving around the room. There was not a lot of equipment there. There was one person in the position of the surgeon, but there was no scrub nurse or

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Q. So the settle plate microbiology study was done in a different OR than the bubble study?

A. As far as I remember, yes.

Q. Do you remember the numbers?

A. What numbers?

Q. Of the theater suites? The operating theaters?

A. No.

Q. So you wouldn't remember which one was Theater 2?

A. No.

MR. SACCHET: Object to form.

MR. C. GORDON: I am at a point where I would like -- I would say let me take a break, go through my remaining stuff, and I am sure I have just a few minutes left. Are you happy to do that, or do you want to just take a break for the evening? And then I promise you, when we start tomorrow, I will have less than 30 minutes.

MR. HEAD: Carry on.

MR. SACCHET: I think it is preferable to us for you to take a look and decide what you still have to ask, and then finish for the night.

THE VIDEOGRAPHER: Going off the record at 5:27. (5:27 p.m.)

(Break taken.)

(5:39 p.m.)

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trays, or anything like that. When we were experimenting, lots of people would be milling in and out of the room, so when we were working out what would be a set-up which was worth investigating, there were lots of people there, but that's not what we collected data on, because people moving around the room is not -- is a variable that you can't control for. So we wouldn't know if a particular result was because someone had walked through the laminar flow zone at the time, or if it was controlled. So in an experimental study, it was important to keep things as consistent as possible so the results were as valid as possible.

Q. Did you repeat the bubble experiment in more than one of the ORs at Wansbeck?

A. The bubble experiment, as reported, was in one OR, as I remember. That bubble generator, I'm sure, has been in more than one room -- more than one operating room. I can think of two that I think it's been in. Ah, no -- yes. The recent study looking at lights and laminar flow was in a different operating room to the one which was published in the Journal of Bone and Joint Surgery. That was the same operating room as the settle plates microbiology study. But Wansbeck bubble study, looking at the influence of Bair Huggers and HotDogs, was only done in one operating room, as far as I can remember.

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THE VIDEOGRAPHER: Back on the record at 5:39.  
BY MR. C. GORDON:

Q. Dr. McGovern, if you could now turn to page 978 through 986. I think that's volume 3.

A. No.

Q. 4?

MR. SACCHET: I think it might be 2, because it's preceding --

MR. C. GORDON: Yeah, it's 2. Sorry.

MR. SACCHET: Page, sorry?

MR. C. GORDON: 978.

A. 978.

BY MR. C. GORDON:

Q. And it goes on through 986, I believe?

A. Okay.

Q. Can you tell me what this document is?

A. It's a document by Professor David Leaper dated August 2009, a draft document titled "Augustine Biomedical Summary of Study Proposals".

Q. And are these -- do these proposals come out from Professor Leaper before you did the first microbiological and particle test?

MR. SACCHET: Object to form, foundation.

A. I don't know. I don't know the -- well, this

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